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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte UWE NIGRIN

Appeal 2009-009205
Application 10/789,469
Technology Center 3700

Before STEVEN D.A. McCARTHY, MICHAEL W. O'NEILL, and
STEFAN STAICOVICI, *Administrative Patent Judges*.

O'NEILL, *Administrative Patent Judge*.

DECISION ON APPEAL¹

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the “MAIL DATE” (paper delivery mode) or the “NOTIFICATION DATE” (electronic delivery mode) shown in the PTOL-90A cover letter attached to this decision.

STATEMENT OF THE CASE

Uwe Nigrin (Appellant) appeals under 35 U.S.C. § 134 from the Examiner's decision rejecting:

- (1) claims 1, 2, 6, 8, 9, and 13 under 35 U.S.C. § 103(a) as unpatentable over Taguchi (Japanese Patent Application Publication No. JP 62-000684 A, published Jan. 6, 1987);²
- (2) claims 1-6 and 8-13 under 35 U.S.C. § 103(a) as unpatentable over Udono (Japanese Patent Application Publication No. JP 56-151296 A, published Nov. 24, 1981);^{3,4}
- (3) claims 7 and 14 under 35 U.S.C. § 103(a) as unpatentable over Udono and Grossner (German Patent Application Publication No. DE-10 2005 007 602 A1, published Aug. 24, 2006).

We have jurisdiction under 35 U.S.C. § 6(b). We REVERSE.

The Invention

The claims on appeal relate to a vane cell pump for delivering fluids. Claims 1 and 8, reproduced below, are representative of the subject matter on appeal.

1. A vane cell pump for delivering fluids, comprising a rotor, a cam ring and a plurality of vanes which are pre-tensioned by means of spring elements, the spring elements being an integral part of the rotor, wherein the rotor is made of

² Our citations are to the English translation made of record July 9, 2008.

³ We have consolidated the Examiner's rejection of claims 1-4, 6, 8-11, and 13 on pages 4-5 of the Examiner's Answer and the Examiner's rejection of claims 5 and 12 on page 5 of the Examiner's Answer into a single rejection as both rejections are under 35 U.S.C. § 103(a) as unpatentable over Udono.

⁴ Our citations are to the English translation made of record July 9, 2008.

plastic and the spring elements are captively molded into the rotor.

8. A vane cell pump for delivering fluids, comprising

a plastic rotor having integrated spring elements captively molded into the rotor,
a cam ring, and
a plurality of vanes whereby the vanes are pre-tensioned by said spring elements.

OPINION

Issue

The determinative issue in this appeal is:

Did the Examiner err in determining that it would have been obvious to a person of ordinary skill in the art to modify the rotor of the vane cell pump of either Taguchi or Udon to be made of plastic and to have integral spring elements “captively molded” (App. Br. 11) therein based upon the case law of *In re Leshin*, 277 F.2d 197, 199 (CCPA 1960)?

Analysis

Appellant contends that neither Taguchi nor Udon discloses or suggests spring elements which are captively molded into the rotor and are an integral part of the rotor as recited in independent claims 1 and 8. App. Br. 5 and 7. Appellant also contends that the recitations of captively molded and integral recite physical conditions which limit the claim and are not just a product-by-process limitation as suggested by the Examiner on page 6, lines 1-5, of the Final Office Action mailed Nov. 27, 2007. *Id.* In view of the Examiner’s citation to *In re Hotte*, 475 F.2d 644, 647 (CCPA 1973), on page 2, lines 4-5, of the Advisory Action mailed Feb. 1, 2008, for the proposition that the word “integral” is sufficiently broad to embrace

constructions united by such means a fastening and welding,” Appellant contends that neither Taguchi nor Udono teaches or suggests that the spring elements are an integral part of the rotor since the spring elements are not fastened or welded or otherwise united with the rotor. App. Br. 6 and 8. Appellant also contends that neither Taguchi nor Udono discloses that the rotor is made of plastic and that making the rotor of plastic is not merely a design feature which would be obvious to a person of ordinary skill in the art because the spring elements can only be captively molded to be an integral part of the rotor if the rotor is made of plastic. App. Br. 7 and 8-9.

The Examiner’s position is that both Taguchi and Udono disclose the invention substantially as claimed, but both Taguchi and Udono fail to explicitly disclose “the rotor being made of plastic.” Ans. 3 and 4. The Examiner posits that it would have been obvious to a person of ordinary skill in the art to have made the rotors of Taguchi and Udono of a plastic material because making the rotor of a plastic material is “merely design parameters, depending on temperature, pressure, or stress acted/applied on the rotor depending on being used for a particular purpose or solving a stated problem.” *Id.* The Examiner also posits that nothing in the record establishes that the claimed plastic rotor presents a novel or unexpected result and cites the case law of *In re Kuhle*, 526 F.2d 553 (CCPA 1975). Ans. 3-4 and 4. The Examiner also posits that “the selection of a know[n] material based upon its suitability for the intended use is a design choice consideration within the skill in the art” and cites to *Leshin*. Ans. 4.

Taguchi discloses a first embodiment of a vane type compressor which includes a cylinder 11 having a rotor 14 eccentrically provided inside thereof. Fig. 1 and translation 5. The rotor 14 has slits 16 in a radial pattern

in which vanes 19 are located so as to be able to rise and sink freely. Fig. 1 and translation 5-6. When the vane 19 has fully sunk in the slit 16, a corrugated spring 17 attached to a holding metal fitting 18 is immediately adjacent the end of the vane 19 and is deformed for maximum spring tension. Fig. 2 and translation 6. When the vane 19 is protruded by the maximum stroke, the corrugated spring 17 is separated from the end of the vane 19 and is not deformed so that there is no spring tension. *Id.* Taguchi is silent as to what material the rotor is made of.

Udono discloses a first conventional embodiment of a vane cell pump P including a rotor 3 and a cam ring 5. Fig. 1 and translation 2. The rotor 3 has grooves 1 spaced in the circumferential direction and in which vanes 2 are located. Fig. 1 and translation 2. The vanes 2 are slidably and radially biased in the grooves via springs 6 so as to press the vanes 4 against the inner circumferential surface 4 of the cam ring 5. Fig. 1 and translation 2-3. Thus, the vanes 4 remain in contact with the cam ring 5 at all times notwithstanding the centrifugal force generated by the rotations of rotor 3 in order to prevent back flow of hydraulic oil when the vane cell pump P is in operation. Fig. 2 and translation 3. Udono also discloses first and second embodiments of a vane cell pump P having a rotor 3, cam ring 5, and vanes 2. Figs. 4-6, Figs. 7 and 8, and translation 4-7. The vanes 4 are located in circumferentially space grooves 1 and are radially biased against the inner circumferential surface 4 of the cam ring 5 by vane biasing bodies 23. Figs. 4-6, Figs. 7 and 8, and translation 4 and 6. The vane biasing body 23 includes an annular ring body 24 from which elastic protrusions 25 extend. Figs. 4-6, Figs. 7 and 8, and translation 4-5 and 6. The annular ring body 24 of the vane biasing body 23 is housed within an annular concave part 22 of

the rotor 3 and the elastic protrusions 5 rest against the outer circumference of the rotor 3. Fig. 5, Fig. 7, and translation 4-5 and 6. In neither the first conventional embodiment nor the first and second embodiments of the present invention is there any disclosure as to what material the rotor is made of.

We agree with Appellant that it would not have been obvious to one of ordinary skill in the art to make the rotors of Taguchi and Udon of a plastic material. The Examiner's reliance upon *Leshin* is misplaced. In *Leshin*, the container-dispenser at issue was of a type made of plastics prior to the invention. Thus, the selection of a known plastic to replace the plastic of a prior art container-dispenser was considered to be obvious since it is well within the skill of an ordinary skilled artisan to replace one plastic with another plastic depending upon the application. *See id.* at 199. However, the present case is distinguishable from *Leshin* because here the Examiner has not established that it is known to make rotors of plastics so that the Examiner would be merely replacing the plastics of a known plastic rotor with another known plastic suitable for a particular application. Since the Examiner has misapplied *Leshin*, we are not persuaded that a person of ordinary skill in the art would have found it obvious to modify the rotor of either Taguchi or Udon to be made of plastic.

In view of the foregoing, we do not sustain the Examiner's rejection of claims 1, 2, 6, 8, 9, and 13 under 35 U.S.C. § 103(a) as unpatentable over Taguchi and the Examiner's rejection of claims 1-6 and 8-13 under 35 U.S.C. § 103(a) as unpatentable over Udon. Since the Examiner has not found that Grossner cures the deficiencies of Udon and since the Examiner's rejection of claims 7 and 14 is based upon the same erroneous

obviousness conclusion as the Examiner's rejection of claims 1-6 and 8-13 under 35 U.S.C. § 103(a) as unpatentable over Udono, we also do not sustain the Examiner's rejection of claims 7 and 14 under 35 U.S.C. § 103(a) as unpatentable over Udono and Grossner.

CONCLUSION

The Examiner erred in determining that it would have been obvious to a person of ordinary skill in the art to modify the rotor of the vane cell pump of either Taguchi or Udono to be made of plastic based upon *Leshin* and thus, have integral spring elements captively molded therein.

DECISION

We reverse the Examiner's rejection of: (1) claims 1, 2, 6, 8, 9, and 13 under 35 U.S.C. § 103(a) as unpatentable over Taguchi; (2) claims 1-6 and 8-13 under 35 U.S.C. § 103(a) as unpatentable over Udono; and (3) claims 7 and 14 under 35 U.S.C. § 103(a) as unpatentable over Udono and Grossner.

REVERSED

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